General

Guideline Title

Best evidence statement (BESt). Effects of amplification on quality of life among school age children with single sided deafness.

Bibliographic Source(s)

Cincinnati Children's Hospital Medical Center. Best evidence statement (BESt). Effects of amplification on quality of life among school age children with single sided deafness. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2011 Jun 20. 5 p. [17 references]

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

The strength of the recommendation (strongly recommended, recommended, or no recommendation) and the quality of the evidence (1a-5b) are defined at the end of the "Major Recommendations" field.

It is recommended that for children with single sided deafness (SSD) amplification be offered (Hol et al., 2010 [3b]; Christensen, Richter, & Dornhoffer, 2010 [4a]; House et al., 2010 [4b]).

> Note 1: Selected educational and family outcomes are important to monitor when amplification is used or if a decision is made not to provide amplification.
>
> Note 2: Utilize quality of life measurements with any child identified with single sided deafness and their families (Borton, Mauze, & Lieu, 2010 [3a]).
>
> Note 3: Educating parents/families and the child on the impact of single sided deafness regarding the potential effects of the hearing loss, current amplification options, costs, and realistic expectations about the devices may increase their ability to make informed an decision regarding interventions (Borton, Mauze, & Lieu, 2010 [3a]).

Definitions:

Table of Evidence Levels

Quality Level	Definition

Quality Level	Definition
1a† or 1b†	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5 or 5a or 5b	Other: General review, expert opinion, case report, consensus report, or guideline

†a = good quality study; b = lesser quality study

Table of Recommendation Strength

Strength	Definition
"Strongly recommended"	There is consensus that benefits clearly outweigh risks and burdens (or vice-versa for negative recommendations).
"Recommended"	There is consensus that benefits are closely balanced with risks and burdens.
No recommendation made	There is lack of consensus to direct development of a recommendation.
Dimensions: In determining the strength of a recommendation, the development group makes a considered judgment in a consensus process that incorporates critically appraised evidence, clinical experience, and other dimensions as listed below.	
1. Grade of the body of evidence (see note above) 2. Safety/harm 3. Health benefit to patient (direct benefit) 4. Burden to patient of adherence to recommendation (cost, hassle, discomfort, pain, motivation, ability to adhere, time) 5. Cost-effectiveness to healthcare system (balance of cost/savings of resources, staff time, and supplies based on published studies or onsite analysis) 6. Directness (the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome]) 7. Impact on morbidity/mortality or quality of life	

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Single sided deafness

Guideline Category

Treatment

Clinical Specialty

Family Practice

Internal Medicine

Otolaryngology

Pediatrics

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To evaluate, among school age children with single sided deafness, if amplification bone conduction hearing aids versus no amplification improve quality of life (QoL)

Target Population

School age children (ages 7-18 years) with single sided deafness

Note: Children with additional learning disabilities are excluded.

Interventions and Practices Considered

Amplification:

- Contralateral routing of signal (CROS)
- Bone anchored hearing aid (BAHA)
- Bone conduction hearing aids (transcranial aid)

Major Outcomes Considered

Quality of life (QoL)

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Search Strategy

Databases: Ovid Medline, PubMed, Google Scholar and hand search.

Keywords: single sided deafness, unilateral hearing loss, unilateral deafness, amplification, quality of life, treatment, outcomes, guidelines

Limits: English language, all dates included

Retrieved: July 29, 2010–November 22, 2010

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Table of Evidence Levels

Quality Level	Definition
1a† or 1b†	Systematic review, meta-analysis, or meta-synthesis of multiple studies
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4a or 4b	Weak study design for domain
5 or 5a or 5b	Other: General review, expert opinion, case report, consensus report, or guideline

†a = good quality study; b = lesser quality study

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Table of Recommendation Strength

Strength	Definition
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"Recommended"	There is consensus that benefits are closely balanced with risks and burdens.
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Dimensions: In determining the strength of a recommendation, the development group makes a considered judgment in a consensus process that incorporates critically appraised evidence, clinical experience, and other dimensions as listed below.

1. Grade of the body of evidence (see note above)
2. Safety/harm
3. Health benefit to patient (direct benefit)
4. Burden to patient of adherence to recommendation (cost, hassle, discomfort, pain, motivation, ability to adhere, time)
5. Cost-effectiveness to healthcare system (balance of cost/savings of resources, staff time, and supplies based on published studies or onsite analysis)
6. Directness (the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome])
7. Impact on morbidity/mortality or quality of life

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Peer Review

Description of Method of Guideline Validation

Reviewed against quality criteria by two independent reviewers

Evidence Supporting the Recommendations

References Supporting the Recommendations

Borton SA, Mauze E, Lieu JE. Quality of life in children with unilateral hearing loss: a pilot study. Am J Audiol. 2010 Jun;19(1):61-72. PubMed

Christensen L, Richter GT, Dornhoffer JL. Update on bone-anchored hearing aids in pediatric patients with profound unilateral sensorineural hearing loss. Arch Otolaryngol Head Neck Surg. 2010 Feb;136(2):175-7. PubMed

Hol MK, Kunst SJ, Snik AF, Cremers CW. Pilot study on the effectiveness of the conventional CROS, the transcranial CROS and the BAHA transcranial CROS in adults with unilateral inner ear deafness. Eur Arch Otorhinolaryngol. 2010 Jun;267(6):889-96. PubMed

House JW, Kutz JW Jr, Chung J, Fisher LM. Bone-anchored hearing aid subjective benefit for unilateral deafness. Laryngoscope. 2010 Mar;120(3):601-7. PubMed

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Improved quality of life (QOL)

Potential Harms

- The primary risk of amplification is dependent upon the amplification device chosen. Amplification options are divided into surgical and nonsurgical options.
- The most common surgical option is the bone anchored hearing aid (BAHA) which includes the general risks involved in surgical procedures, such as anesthesia and infection, as well as the potential failure of the device to integrate with the bone. Another consideration is the high cost of the surgical procedure compared to the outcome benefits. The appearance of the device has also been a concern reported by some patients.
- The nonsurgical options include cross routing of signal hearing aids (CROS aids) and bone conduction hearing aids (the TransEar and transcranial CROS in-the-ear hearing aids). The cost of the device is a consideration as most hearing aids are not covered by insurance companies. The appearance of these devices has also been expressed as a concern by some patients and their parents.
- Common to all amplification devices is the time and effort to manage the hearing devices and the possibility that some children may have difficulty appropriately managing their devices, depending on their dexterity and developmental skills.

Qualifying Statements

Qualifying Statements

This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Patient Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Jun 20

Guideline Developer(s)

Cincinnati Children's Hospital Medical Center - Hospital/Medical Center

Source(s) of Funding

Cincinnati Children's Hospital Medical Center

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

Team Leader: Lori Garland, MS, Pediatric Audiologist II, Division of Audiology, Cincinnati Children's Hospital Medical Center

Support Personnel: Barbara K. Giambra, MS, RN, CPNP, Center for Professional Excellence/Research and Evidence-based Practice, Cincinnati Children's Hospital Medical Center

Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the Cincinnati Children's Hospital Medical Center .

Print copies: For information regarding the full-text guideline, print copies, or evidence-based practice support services contact the Cincinnati Children's Hospital Medical Center Health James M. Anderson Center for Health Systems Excellence at EBDMInfo@cchmc.org.

Availability of Companion Documents

The following are available:

- Judging the strength of a recommendation. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2008 Jan. 1 p. Available from the Cincinnati Children's Hospital Medical Center .
- Grading a body of evidence to answer a clinical question. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 1 p. Available from the Cincinnati Children's Hospital Medical Center .
- Table of evidence levels. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2008 Feb 29. 1 p. Available from the Cincinnati Children's Hospital Medical Center .

Print copies: For information regarding the full-text guideline, print copies, or evidence-based practice support services contact the Cincinnati Children's Hospital Medical Center Health James M. Anderson Center for Health Systems Excellence at EBDMInfo@cchmc.org.

Patient Resources

The following is available:

- Hearing loss/cochlear implant. Available from the Cincinnati Children's Hospital Medical Center Web site .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

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